

CLAIMS

What is claimed is:

- 1 1. A computer system, comprising:
 - 2 a biometric device configured to transmit images;
 - 3 an interface coupled to the device to receive the transmitted images, wherein the interface
 - 4 is configured to determine if the transmitted images include bands.
- 1 2. The computer system of claim 1, wherein the interface is configured to report failure if the
- 2 interface determines that the transmitted images include bands.
- 1 3. The computer system of claim 1, wherein the bands are attributable to illumination changes.
- 1 4. The computer system of claim 1, wherein the bands are attributable to electrical changes.
- 1 5. The computer system of claim 1, wherein the bands are attributable to induction across the
- 2 biometric device.
- 1 6. The computer system of claim 1, wherein the interface is configured to process the images to
- 2 determine minutia information.
- 1 7. The computer system of claim 6, wherein the interface is configured to convert the minutia
- 2 information into a template only if the interface does not determine that the transmitted images
- 3 include bands.

1 8. The computer system of claim 1, wherein the biometric device is a fingerprint scanner
2 configured to transmit images of fingerprints.

1 9. The computer system of claim 1, wherein the interface determines if one or more of the
2 transmitted images include at least one straight line having at least a predetermined width across
3 the image.

1 10. The computer system of claim 1, wherein the interface processes a plurality of rows to
2 determine a corresponding plurality of grayscale value histograms.

1 11. The computer system of claim 10, wherein the interface processes the plurality of grayscale
2 value histograms to determine a corresponding plurality of modes for the grayscale value
3 histograms.

1 12. The computer system of claim 11, wherein the interface determines if the plurality of modes
2 indicate the existence of bands in the images by determining if the modes exhibit variations greater
3 than a predetermined amount.

1 13. The computer system of claim 1, wherein the interface connects to an expansion slot, and
2 wherein the computer system further comprises:
3 a system memory configured to store software;

4 a processor coupled to the system memory and configured to execute the software, wherein
5 the processor is further coupled to the interface, wherein the software configures the
6 processor to initiate operation of the interface and biometric device.

1 14. The computer system of claim 13, wherein the processor is configured to receive a template
2 from the interface, and wherein the processor is configured to compare the template to a stored
3 template.

1 15. The computer system of claim 13, wherein the computer system further comprises:
2 a network interface coupled to a network login server, wherein the network login server is
3 configured to receive a template from the interface, and wherein the network login
4 server is configured to compare the template to a stored template.

1 16. A fingerprint verification method that comprises:
2 capturing a fingerprint image; and
3 determining if the fingerprint image includes bands, and if so, aborting creation of a
4 fingerprint template.

1 17. The method of claim 16, wherein said bands are bands attributable to illumination changes.

1 18. The method of claim 16, wherein the determining is one of a plurality of security tests, and
2 wherein the method further comprises:

3 creating a fingerprint template if the image passes the plurality of security tests.

1 19. The method of claim 18, wherein the creating includes:

2 extracting minutia information from the fingerprint image; and

3 converting the minutia information into the fingerprint template.

1 20. The method of claim 19, wherein the plurality of security tests includes:

2 determining if minutia information from one fingerprint image matches minutia

3 information from another fingerprint image.

1 21. The method of claim 16, wherein the capturing includes:

2 illuminating a window from a scanning side;

3 scanning light reflected back through the window in raster fashion.

1 22. The method of claim 16, wherein the determining includes:

2 detecting at least one straight line spanning the image and having at least a predetermined

3 width .

1 23. The method of claim 16, wherein the determining includes:

2 finding a grayscale value histogram mode for each row of the fingerprint image;

3 calculating a variance of the modes; and

4 determining that the fingerprint image includes bands if the variance exceeds a

5 predetermined threshold.

1 24. The method of claim 18, wherein the plurality of tests includes: and
2 extracting minutia information from a plurality of fingerprint images;
3 comparing the minutia information of the plurality of images to determine if at least a
4 minimum amount of variation exists, and if not, aborting the creation of the
5 fingerprint match template.

1 25. A fingerprint verification system that comprises:
2 a capture means for capturing a fingerprint image; and
3 a processing means for determining if the fingerprint image includes bands attributable to
4 condition changes during the capturing of the fingerprint image.

1 26. The system of claim 25, wherein said condition changes include illumination intensity changes.

1 27. The system of claim 25, wherein if the processing means determines that the fingerprint image
2 includes bands, the processing means prevents creation of a fingerprint template from information
3 in the fingerprint image.